

ABSTRACT

A method of programming the memory cell comprises setting the memory cell to an initial state of a first gate threshold voltage, performing a processing sequence including: applying a voltage bias between the gate and the first junction region to cause an electric hole to migrate towards and be retained in the trapping layer, and evaluating a read current generated in response to the voltage bias to determine whether a second gate threshold voltage is reached, wherein the second gate threshold voltage is lower than the first gate threshold voltage. The processing sequence is repeated a number of times by varying one or more time the voltage bias between the gate and the first junction region until the second gate threshold voltage is reached and the memory cell is in a program state.